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ABSTRACT

The Missouri Mastery and Achievement Tests (MMAT) were developed as a result of the state's Excellence in Education Act of 1985, which called for assessments of core competencies and key skills in reading/language arts/English, mathematics, science, and social studies/civics. The revised MMAT, like the original test, includes four multiple-choice items to measure each key skill. The MMAT for grades 3, 6, 8, and 10 includes subtests for each of the 4 domains, for a total of about 300 questions per grade level. This report presents data for the 1997 administration. Results indicate that student achievement has leveled off in recent years, with little improvement shown since the implementation of the revised tests in 1991 and 1992. There was, however, an upward trend for scaled score averages, with the exception of 10th-grade social studies. The 1996 MMAT results are somewhat encouraging even though most data show relatively stable student scores. A table presents key skill mastery data for all grades and subjects. (Contains four figures.) (SLD)

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Missouri Mastery and Achievement Tests

Summary Report

1997

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Missouri Department of Elementary and Secondary Education

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For more information regarding results contained in this report contact the Assessment Resource Center at 1-800-366-8232, Columbia, Missouri

History of the
Missouri Mastery and Achievement Tests (MMAT)

The MMAT was developed as a result of the Excellence in Education Act of 1985. This law required the Department of Elementary and Secondary Education to identify "core competencies and key skills" in reading/language arts/English, mathematics, science, and social studies/civics; to test annually a sample of students throughout Missouri; and to report results to the General Assembly. Local school districts are required to measure student achievement on the key skills and to identify areas in need of instructional improvement.

The *Core Competencies and Key Skills for Missouri Schools* documents, revised in 1992 for grades 2-6 and 1991 for grades 7-10, identify key skills as required by the Excellence in Education Act. These documents were developed with the assistance of Missouri educators, and provide a framework around which districts can build a complete curriculum.

The MMAT was designed in accordance with the American Psychological Association's Standards for Educational and Psychological Testing. Missouri teachers assisted in writing test items.

The revised MMAT, like the original test, includes four multiple-choice items to measure each key skill. To demonstrate mastery of a key skill, a student must correctly answer at least three of the four items. The MMAT for grades 3, 6, 8, and 10 includes four subtests (reading/language arts/English, Mathematics, science and social studies/civics). Each subtest contains between 56 and 104 items for a total of about 300 questions per grade level. Test administrations requires approximately 2 hours per subtest.

The MMAT is available for district use for grades 2-10. State level data is currently reported for grades 3, 6, 8, and 10. Many Missouri students in grades 3 and 6 take the MMAT (approximately 50,000 for each grade). A representative sample in grades 8 and 10, which includes an estimated 10 percent of Missouri students, take the MMAT(approximately 5,000 for each grade).

MMAT Data:

Scale Scores allow districts to determine how their students compare with other Missouri students and to monitor educational progress over time.

Scale Distribution Data help educators determine whether instruction efforts are reaching all of the various populations of students taking the test.

Key Skill Mastery Data provides information to help teachers guide instruction for individual students and/or enables districts to evaluate the effectiveness of curriculum and identify needed changes.

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Summary

The 1997 Summary Report presents trend data for the springs of 1996 and 1997. Data from the first year the revised Missouri Mastery and Achievement Tests (MMAT) were administered is also presented. The report includes data for grades 3, 6, 8, and 10. Spring 1997 MMAT results indicate student achievement has leveled off in recent years, with students showing little improvement across most grade levels or subject areas since the implementation of the revised tests in 1992 (grades 3 & 6) and 1991 (grades 8 & 10). In relation to the base or initial year of testing in 1987, scores are up, indicating instruction has impacted students at most levels of achievement in a positive way. The 1997 Summary Report has trend data for scaled scored averages, score distribution and key skills mastered.

Scaled Score Averages - In grades 3, 6, 8, and 10, Missouri students demonstrated, on the average, an upward trend in achievement. Grade 10 shows no meaningful improvement in social studies since establishment of the 1987 baseline. (Reference Figure A, Page 4)

Score Distribution Data - Student scores have leveled off over time and remain relatively flat for 1997. Scores are up in relation to the base or initial year of testing (1987). However, there has been no significant change in the lowest two quintiles since the 1992 and 1991 revision years. (Reference Figure B, page 5)

Key Skills Mastered - The average students' performance in general has remained stable. Grade 10 has regained percentage points to match 1994 levels in the area of math and science, after a 7% and 5% drop respectively in 1995. (reference Figure C-E, Pages 6-16).

The 1997 MMAT results are somewhat encouraging, in that student scores have improved over the established 1987 baseline. But on the whole, most data shows student scores relatively stable in recent years. The MMAT continues to provide a framework for fulfilling one of the major goals of the Excellence in Education Act - encouraging academic excellence for all of Missouri's public school students.

Missouri Department of Elementary and Secondary Education,

Assessment Section

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Scaled Score Averages

- Scaled score averages monitor educational progress over time.
- Each subject is shown for 1996 and 1997 for grades 3, 6, 8, and 10. Each subject is also shown for the first year the revised MMAT was administered (1992 for grades 3 and 6, and 1991 for grades 8 and 10).
- In 1987 a baseline was established and the average for each grade and subject was set at 300.
- **A sustained change of about 11 points over time is considered educationally meaningful.**

Figure A: Scaled Score Averages

Grade	Year	Reading/ English/ Lang. Arts	Math	Science	Social Studies	Average
3	1992	323	339	364	336	341
	1996	325	346	374	348	348
	1997	**332**	**356**	**388**	**362**	**360**
6	1992	308	349	347	322	332
	1996	314	372	369	335	348
	1997	**319**	**382**	**380**	**343**	**356**
8	1991	318	331	339	315	326
	1996	317	355	357	321	338
	1997	**327**	**354**	**376**	**333**	**348**
10	1991	313	326	327	302	317
	1996	308	339	333	300	320
	1997	**316**	**339**	**340**	**306**	**325**

Summary

Students, on the average, demonstrated a slight upward trend in performance in Grades 3, 6, 8, and 10 for 1997. Student Scores have risen since the 1987 baseline was established but achievement has leveled off somewhat in recent years.

Score Distribution Data

- Score distribution data can be used to monitor the specific effects of instruction over time. Each subject area is shown for grades 3, 6, 8, and 10 for years 1996, and 1997. Each subject is also shown for the first year the revised MMAT was administered (1992 for grades 3 and 6, and 1991 for grades 8 and 10).
- In 1987 the scaled scores were rank-ordered. The ranked scores were divided into five equal parts. Twenty-percent of the students fell into each part or cell, thus establishment of a baseline.
- Overtime, the percentage of students in the bottom two cells should decease, and the percentage of students in the top two cells should increase. The percentage of students in the bottom two cells should be close to zero.

Figure B: Score Distribution Quintiles

Grade		Reading/English /Lang.Arts			Math			Science			Social Studies		
		'92	'96	'97	'92	'96	'97	'92	'96	'97	'92	'96	'97
3	High	32	34	**37**	42	46	**51**	54	59	**66**	40	47	**54**
		22	21	**23**	20	20	**21**	20	17	**17**	20	17	**18**
		18	17	**18**	15	13	**13**	10	09	**08**	14	12	**11**
		15	14	13	12	10	**09**	08	07	**06**	12	10	**08**
	Low	13	14	**10**	11	11	**07**	08	08	**04**	14	14	**09**
6	High	24	27	**29**	44	55	**59**	46	55	**59**	34	41	**44**
		20	21	**22**	19	18	**18**	17	15	**15**	19	19	**20**
		19	19	**19**	14	11	**10**	13	11	**10**	15	13	**13**
		19	17	**17**	11	08	**07**	10	08	**08**	14	13	**12**
	Low	18	16	**14**	11	08	**06**	14	11	**08**	18	14	**11**
Grade		'91	'96	'97	'91	'96	'97	'91	'96	'97	'91	'96	'97
8	High	29	30	**35**	36	49	**48**	40	47	**55**	29	33	**39**
		20	20	**21**	18	18	**19**	18	16	**15**	18	19	**19**
		20	17	**17**	16	13	**13**	14	12	**11**	18	15	**16**
		17	18	14	15	11	11	12	11	**08**	15	15	**12**
	Low	14	15	13	14	10	10	15	14	**11**	20	18	**15**
10	High	28	28	30	34	41	40	35	40	**43**	22	23	**24**
		19	18	19	20	19	20	20	18	**19**	19	19	**20**
		16	15	16	16	14	15	16	14	**14**	18	17	**19**
		18	17	17	15	12	12	13	12	**11**	19	18	**17**
	Low	19	23	18	15	15	14	15	16	**13**	22	24	**20**

Summary

Student scores have leveled off over time and remain relatively flat for 1997. Scores are up in relation to the base or initial year of testing (1987). However, there has been no significant change in the lowest two quintiles since the 1991 and 1992 revision years.

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Median Student Mastery

- The table shows the percent of key skills mastered by the average or median student in Missouri in each subject area for grades 3, 6, 8, and 10.
- The number at the top of each grade and subject represents the total number of skills tested for that subject area and grade level.
- Each number represents the percent of key skills mastered by the average student in Missouri for the noted year.

Figure C: Percent of Key Skills Mastered by the Average Student By Year

Grade	Reading/English/ Language Arts	Math	Science	Social Studies
	'91 '96 '97	'91 '96 '97	'91 '96 '97	'91 '96 '97
3	18 Total Key Skills Tested 72% 78% **78%**	13 Total Key Skills Tested 77% 77% **85%**	17 Total Key Skills Tested 83% 83% **83%**	10 Total Key Skills Tested 80% 80% **90%**
6	20 Total Key Skills Tested 70% 70% **75%**	16 Total Key Skills Tested 56% 63% **69%**	17 Total Key Skills Tested 53% 59% **65%**	21 Total Key Skills Tested 62% 67% **71%**
Grade	'91 '96 '97	'91 '96 '97	'91 '96 '97	'91 '96 '97
8	25 Total Key Skills Tested 60% 60% **64%**	16 Total Key Skills Tested 50% 56% **56%**	14 Total Key Skills Tested 43% 43% **50%**	8 Total Key Skills Tested 61% 61% **67%**
10	22 Total Key Skills Tested 56% 59% **64%**	15 Total Key Skills Tested 40% 47% **47%**	20 Total Key Skills Tested 35% 35% **40%**	23 Total Key Skills Tested 52% 48% **52%**

Summary

The table indicates the average student achievement, in general, has remained relatively stable. Grade 10 regained percentage points in the areas of math and science, after a 7% and 5 % drop respectively in 1995.

Median Student Mastery In All Subject Areas

- The table presents a summary of all subjects areas for grades 3, 6, 8, and 10.
- Data is presented for 1996 and 1997. Data are also shown for the first year the revised MMAT was administered (1992 for grades 3 and 6, and 1991 for grades 8 and 10).
- The table shows total key skills for all subjects areas mastered by the median student in the noted grade level.

Figure D: Median Student Mastery all Subject Areas

Grade	1992 (Grades 3 &6) 1991 (grades 8 &10)	1996	1997
3	41 key skills mastered out of a total of 53 41/53=77%	42 key skills mastered out of a total of 53 42/53=79%	**44 key skills mastered out of a total of 53** **44/53=83%**
6	45 key skills mastered out of a total of 74 45/74=61%	48 key skills mastered out of a total of 74 48/74=65%	**52 key skills mastered out of a total of 74** **52/74=70%**
8	40 key skills mastered out of a total of 73 41/73=55%	41 key skills mastered out of a total of 73 41/73=56%	**44 key skills mastered out of a total of 73** **44/73=60%**
10	38 key skills mastered out of a total of 80 38/80=48%	39 key skills mastered out of a total of 80 39/80=49%	**41 key skills mastered out of a total of 80** **41/80=51%**

Summary

The table indicates the average student performance, in general, has remained relatively stable. Grade 10 has regained percentage points after a drop in 1995.

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Key Skill Mastery Data

- The information on pages 8-16 shows the percent of students in Missouri mastering each tested objectives for the years 1996, and 1997; in grades 3, 6, 8, and 10. Data are also shown for the first year the revised MMAT was administered (1992 for grades 3 and 6, and 1991 for grades 8 and 10). The key skills are presented in *Core Competencies and Key Skills for Missouri Schools*.
- The key skills are listed by the code number used in respective publication and a brief descriptor.
- Each tested objective is measured by four items. The student must answer at least three of the four correctly to demonstrate mastery of the key skill.
- A change of 5 or more percentage points between years is educationally meaningful.
- See Figures C & D for percentage of key skills mastered by median students and total skills mastered by grade.

Figure E: Key Skill Mastery Data

Grade 3

Reading/Language Arts

Key Skill		Percent of Students Demonstrating Mastery		
		1992	1996	**1997**
B-1	Contextual Word Meaning	59	60	**64**
B-2	Prefixes/Suffixes	68	70	**74**
B-3	Synonyms/Antonyms	65	64	**68**
B-4	New Word Meanings	68	66	**69**
C-1	Story Elements	83	83	**86**
C-2	Fact/Fantasy	70	70	**74**
C-3	Cause/Effect	74	74	**77**
C-4	Main Ideas	58	58	**61**
C-5	Conclusions/Generalizations	58	58	**81**
C-7	Outcome Prediction	75	75	**78**
C-8	Story Title	51	53	**56**
C-10	Summarization	53	55	**57**
D-5	Directions	79	80	**82**
G-3	Effective Writing	66	67	**72**
G-6	Sentence Combining	69	71	**75**
G-9	Capitalization	68	69	**73**
G-10	Punctuation	50	53	**56**
G-11	Grammatical Usage	72	70	**74**

Grade 3

Mathematics

Key Skills

		Percent of Students Demonstrating Mastery		
		1992	1996	1997
A-2	Number Comparison	74	78	82
A-3	Place Value	61	65	69
A-6	Fractional Parts	73	75	80
B-4	Addition/Subtraction	80	79	82
B-5	Multiplication	71	72	75
B-7	Open Sentences	66	67	69
D-3	Time	71	73	77
D-5	Measurement	78	79	83
E-2	Shapes	77	81	85
F-2	Displays of Data	69	69	74
F-3	Grids	62	64	69
H-2	Money Problems	61	63	66
H-4	Problems	61	65	68

Grade 3

Science

B-3	Organisms in Ecosystems	83	84	87
C-1	Seed Germination & Growth	80	82	86
C-2	Seeding Growth	60	63	68
C-3	Animal/Plant Development	87	88	91
E-3	Temperature Measurement	56	58	61
G-2	Effects if Heating/Cooling	87	87	90
H-2	Effects of Pushing/Pulling	84	84	88
H-4	Hazardous Situations	84	83	86
I-1	Objects in the Sky	82	83	86
I-2	Light Producers/Reflectors	61	62	70
I-4	Temperature/Precipitation	71	75	79
J-1	Shadow Lengths	56	60	64

Grade 3

Social Studies/Civics

A-4	Map-reading Skills	80	80	84
A-5	Features of Maps	71	74	78
B-2	Effects of Regional Changes	56	58	62
F-1	Past/Present Comparisons	79	79	84
G-2	Democratic Decision Making	74	76	82
H-2	Major Offices of Government	46	51	54
J-1	Responsible Behavior	87	87	90
K-1	Respect for Others	83	83	87
M-2	Economic Choices	55	65	73
V-1	Interpret Sources	77	76	80

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Grade 6

Reading/Language Arts

Key Skill		Percent of Students Demonstrating Mastery		
		1992	1996	**1997**
B-1	Contextual Word Meaning	69	70	**72**
B-3	Synonyms/Antonyms	35	37	**39**
C-1	Story Elements	60	61	**62**
C-2	Fact/Opinion	81	83	**86**
C-3	Cause/Effect	85	85	**86**
C-4	Main Idea	73	77	**79**
C-5	Conclusions/Generalizations	78	79	**80**
C-7	Outcome Prediction	72	74	**76**
C-8	Author's Purpose	69	72	**76**
C-10	Summarization	54	57	**58**
C-12	Figurative Language	75	77	**79**
C-13	Point of View	51	54	**58**
D-1	Learning Resources	67	69	**71**
D-5	Directions	88	88	**89**
G-3	Effective Writing	59	68	**70**
G-7	Draft Revision	51	55	**57**
G-8	Spelling	45	46	**47**
G-9	Capitalization	51	54	**55**
G-10	Punctuation	55	57	**58**
G-11	Grammatical Usage	53	58	**60**

Grade 6

Mathematics

A-2	Fraction/Decimal Comparison	41	51	**54**
A-4	Numerical Sequences	56	67	**70**
A-6	Graphing on Number Lines	37	46	**49**
B-6	Arithmetic	45	51	**54**
B-7	Number Sentences	77	77	**78**
B-8	Fraction Multiplication	67	66	**70**
B-9	Order of Operations	48	58	**64**
D-1	Measurement	68	75	**78**
D-5	Area/Perimeter	46	53	**56**
D-9	Convert Units of Measurement	35	42	**44**
E-4	Properties of Shapes	58	69	**73**
F-1	Data Collection	72	79	**81**
F-2	Displays of Data	68	73	**76**
H-1	Money Problems	69	72	**74**
H-4	Multistep Problems	53	57	**69**
H-5	Nonstanard Problems	39	43	**44**

Grade 6

Science

Key Skill		Percent of Students Demonstrating Mastery		
		1991	1996	1997
B-1	Requirements for Life	68	71	73
B-2	Parts of Plants	34	40	44
B-3	Photosynthesis	40	46	50
C-2	Plant/Animal Growth Rates	81	85	86
C-3	Endangered Species	57	65	68
E-4	Acids/Bases	44	51	56
E-5	Metric Measurement	58	58	60
G-1	Chemical/Physical Changes	64	65	69
H-1	Simple/Compound Machines	50	51	54
H-3	Friction	55	57	60
H-5	Electromagnets	69	75	77
H-6	Electricity	77	82	84
H-7	Electric Circuits	48	55	59
H-11	Potential/Kinetic Energy	39	49	53
I-1	Minerals	69	74	77
K-2	Soil Erosion	23	25	27
K-3	Fossils	37	44	46

Grade 6

Social Studies/Civics

A-4	Map-reading Skills	57	61	63
A-5	Features of Maps	58	61	63
A-6	Maps United States	61	67	71
A-7	Maps World	52	61	63
B-2	Effects of Regional Changes	53	56	60
E-1	Time Line Interpretations	54	60	62
E-3	Fact/Value Judgment	56	66	70
F-4	Cause/Effect Relationship	49	57	59
G-1	Democratic Practices/Values	49	54	56
G-3	Democratic Decision Making	77	81	83
H-1	Government Activities	49	54	57
I-2	Rights/Responsibilities	64	68	70
M-2	Economic Choices	64	63	68
N-1	Production Terms	42	48	50
P-2	Supply/Demand Predictions	79	82	84
Q-2	Government & Economy	47	53	56
R-6	Regional Specialization	56	49	51
S-4	Social/Cultural Roles	59	63	65
T-1	Meeting Human Needs	65	68	72
V-1	Meeting Human Needs	67	71	73
V-2	Library Resources	67	71	73

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Grade 8

English/Language Arts

Key Skill		Percent of Students Demonstrating Mastery		
		1991	1996	1997
B-1	Contextual work Meaning	68	68	70
C-1	Story Elements	58	55	56
C-2	Fact/Opinion	68	67	71
C-3	Cause/Effect	69	67	73
C-4	Main Idea	49	46	50
C-5	Inferences/Conclusions	60	58	62
C-7	Propaganda Techniques	42	45	49
C-8	Author's Purpose	54	51	57
C-9	Pilot/Setting Relationship	55	53	59
C-10	Summarization	55	56	59
C-12	Figurative Language	60	62	67
D-1	Reference Sources	50	55	58
D-5	Directions	78	76	79
D-6	Compare Sources	76	75	78
E-1	Schedules/Timetables	72	70	76
E-2	Instructions/Labeling	32	61	66
G-2	Main Idea/Details	33	35	40
G-3	Story Details	66	65	68
G-4	Organizational Elements	45	43	50
G-5	Persuasive Rhetoric	56	54	59
G-6	Sentence Combining	46	47	51
G-8	Spelling	56	58	58
G-9	Capitalization	51	52	54
G-10	Punctuation	44	47	50
G-11	Grammatical Usage	56	57	62

Grade 8

Mathematics

A-1	Interpreting Numbers	51	67	63
A-2	Number Comparison	42	51	51
A-7	Number Theory	34	48	45
B-7	Solving Linear Equations	43	61	61
B-9	Algebraic Expressions	61	73	71
C-5	Estimation Problems	55	60	62
D-6	Perimeter/Area	42	51	51
D-10	Circle Circumference/Area	38	43	38
E-1	Lines/Angles	63	68	67
E-2	Polygon Classification	32	34	34
E-3	Similar/Congruent Figures	54	61	62
F-4	Probability	55	58	61
G-4	Sequential Instructions	65	72	68
H-1	Consumer Money Problems	41	43	43
H-3	Area/Perimeter Problems	49	55	56

Grade 8

Science

Key Skill		Percent of Students Demonstrating Mastery		
		1991	1996	1997
A-2	Vertebrate Classification	63	63	73
B-1	Cell Parts	37	37	43
D-1	Human Body Systems	60	63	67
D-4	Pollution Effects	60	61	64
D-5	Variables in an Experiment	19	27	28
E-1	Kinetic/Potential Energy	34	43	48
E-5	Heat Transfer	35	46	50
E-6	Atoms/Elements/Compounds	40	45	52
F-1	Wave Characteristics	20	27	33
H-1	Energy in Systems	48	56	60
H-5	Periodic Table	68	70	75
I-3	Missouri Fossils	24	34	35
L-2	Weather Prediction	44	48	54
L-6	Climatic Zones	40	44	49

Grade 8

Social Studies/Civics

A-4	Map-reading Skills	73	74	78
A-6	Maps: United States	67	72	77
A-7	Maps: World	70	72	74
B-2	Effects of Regional Changes	47	49	53
E-5	Historical Resources/Biases	46	52	60
F-4	Early American History	43	47	52
F-5	U.S. History to Civil War	35	37	42
G-1	Democratic Practices/Values	60	63	64
G-2	Democratic Decision Making	63	67	73
H-2	Government Offices	46	46	51
H-4	Legislative Procedures	46	46	53
I-2	Rights/Responsibilities	55	58	62
J-3	Citizen Influence	63	65	69
K-2	Political Issue Analysis	45	49	52
M-3	Economic Decision Making	65	66	70
N-1	Results of Production Change	50	49	56
P-4	Changes in Supply/Demand	60	61	66
V-3	Research Methods	71	75	79

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Grade 10

English/Language Arts

Key Skill		Percent of Students Demonstrating Mastery		
		1991	1996	**1997**
B-1	Contextual Word Meaning	67	63	**67**
B-2	Prefixes/Suffixes	51	50	**54**
C-1	Story Theme	64	61	**63**
C-2	Examples/Illustrations	46	45	**48**
C-3	Cause/Effect	66	62	**65**
C-4	Main Idea	61	56	**59**
C-5	Inferences/Conclusions	49	49	**48**
C-7	Plot Elements	66	65	**69**
C-8	Author's Purpose	54	51	**55**
C-9	Literary Forms	58	56	**59**
C-10	Figurative Language	47	47	**51**
D-1	Reference Sources	61	60	**63**
D-4	Organize Information	62	64	**67**
D-5	Directions	74	71	**75**
D-6	Compare Sources	60	57	**62**
E-1	Business Correspondence	47	44	**49**
E-2	Occupational Information	68	66	**66**
G-2	Paragraph Construction	56	54	**58**
G-3	Sentence Revision	59	56	**60**
G-5	Spelling/Usage/Structure	50	47	**49**
G-7	Punctuation	49	50	**52**
G-9	Writing Techniques	45	44	**45**

Grade 10

Mathematics

A-5	Simplify Expressions	61	62	**59**
B-7	Solve Linear Equations	41	51	**53**
B-10	Solve Formulas	30	34	**34**
C-1	Estimation	36	45	**45**
C-5	Estimation Problems	48	52	**52**
D-5	Pythagorean Theorem	46	53	**52**
E-1	Lines/Angles	49	52	**53**
E-3	Linear Equation Graphs	25	30	**30**
E-6	Similar/Congruent Figures	40	46	**49**
F-2	Probability	44	48	**51**
F-3	Inference Limitations	34	36	**37**
G-1	Logical Conclusions	64	66	**64**
G-2	Conclusion Validity	57	58	**59**
H-2	Banking Problems	63	64	**64**
H-4	Net Pay Computation	38	38	**40**

Grade 10

Science

Key Skill		Percent of Students Demonstrating Mastery		
		1991	1996	1997
A-2	Mitosis/Meiosis	31	35	35
A-3	Classification: Kingdoms	30	32	35
A-4	Classification: Phyla	46	46	52
B-1	Functions of Cell Parts	26	34	36
C-4	Natural Selection	28	32	34
D-2	Marine/Terrestrial Environments	29	36	39
D-3	Overpopulation Problems	43	42	42
D-4	Elemental Cycles & Food Webs	53	52	55
D-7	Sexually Transmitted Disease	69	72	71
E-3	Scientific Notation	12	14	15
F-2	Solution/Suspension/Colloid	33	33	34
F-7	Nuclear Fission/Fusion	17	17	16
G-1	Kinetic-Molecular Theory	35	34	37
G-2	Energy Transformation	46	47	48
H-1	Newton's Law of Motion	27	30	32
I-2	Earth Region Classification	44	50	51
K-1	Time Line/Earth History	61	63	65
L-1	Experimental Variables	15	22	23
L-3	Energy Needs	45	42	45
L-4	Toxic/Nuclear Waste	66	63	65

Grade 10

Social Studies/Civics

A-4	Map-reading Skills	61	61	65
A-6	Maps: United States	52	60	61
A-7	Maps: World	60	65	66
B-2	Effects of Regional Changes	50	47	49
E-5	Historical Resources/Biases	42	42	45
F-3	Historical Personages	35	33	34
F-4	History Events: America	47	45	46
F-7	History Events: Modern World	29	29	29
F-8	Contributions of Cultures	32	37	42
F-12	Historical Sequences: U S	53	47	49
F-13	Historical Sequences: World	32	33	33
G-5	U S. Political Documents	35	35	37
G-6	Comparisons of Governments	51	48	52
H-2	Government Offices	53	52	54
H-3	Federal/State Governments	68	68	70

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Grade 10

Social Studies/Civics - Continued

J-3	Citizen Influence	62	60	**64**
K-2	Political Issue Analysis	49	48	**49**
L-1	Propaganda Analysis	52	54	**56**
N-5	Influences on GNP	54	51	**55**
O-5	Economic Institutions	63	58	**62**
Q-3	Market 7 Command Economics	47	44	**45**
Q-7	GNP & Living Conditions	51	50	**53**
S-6	Prejudice/Discrimination	73	71	**74**